

ORD 1025  
1015-12  
46

**From:** Bath, Bill  
**To:** Gilliam, Jessica; Eisenbeis, John; Smith, Michael J.; Hendershot, Philip; Pickus, Wayne  
**Subject:** RCRA permit amendment for switching to biological treatment  
**Date:** Wednesday, July 25, 2012 8:10:02 AM  
**Attachments:** [10-03-05 newspaper notice.pdf](#)  
[10-04-05 certification ltr.pdf](#)  
[public notice \(final\).pdf](#)  
[TheDallesAuthorization.doc](#)  
[09-13-05 Class 2 Permit Modification.pdf](#)  
[09-13-05 Class 3 permit modification.pdf](#)  
[Attachment E 9-15-05 ILS Change .pdf](#)  
[Attachment F.pdf](#)  
[BATCH PROCEDURE FOR TANK DISCHARGE 09-01-05.pdf](#)  
[SAP Class 2 Permit Modification.pdf](#)  
[10-03-05 Addendum Class 2&3.pdf](#)  
[ATTACHMENT A .pdf](#)  
[Attachment B 9-12-05 .pdf](#)

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A RCRA "temporary authorization" was granted in 2004 to do biological treatment and possibly gas injection. Here is a 2005 RCRA permit amendment for switching to biological treatment (and possibly gas injection...I didn't read that far).

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This is a notice of proposed Class 2 and Class 3 modifications to the post-closure DEQ hazardous waste permit issued to the Lockheed Martin (fka Martin Marietta) The Dalles facility located within the confines of Northwest Aluminum at 3313 W. 2<sup>nd</sup> Street.

The Class 2 request is to change the remedy for cyanide treatment from a thermal to a bioremediation treatment and the Class 3 request is add ARCADIS, Inc., as the operator on the post-closure permit.

This notice serves as an announcement of a comment period for 60 days. Comments must be sent to the agency at:

Mr. Brett McKnight  
Oregon Department of Environmental Quality  
2146 NE 4th Street  
Bend, OR 97701

Contact information: For Lockheed Martin/Arcadis; Keith Smith at 405.449.7001 x111; for DEQ, Fredrick Moore at 541.388.6146 x242. A public meeting to discuss this proposal will be held November 8<sup>th</sup>, 7 p.m. in the Board Room at the Columbia Gorge Community College, 400 East Scenic Drive, Building 1, Room 162. Copies of the modification can be viewed at the DEQ The Dalles office in Building C Room 307 at the College.. The permittee's compliance history during the life of the permit being modified is available from the DEQ contact person.

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*Infrastructure, buildings, environment, communications*

Fredrick Moore  
Oregon Department of Environmental Quality  
Eastern Region Hazardous Waste Program  
2146 NE 4<sup>th</sup> Street  
Bend, OR 97701

ARCADIS G&M, Inc.  
1610 B Street  
Suite 100  
Helena  
Montana 59601  
Tel 406 449 7001  
Fax 406 449 3036  
www.arcadis-us.com

ENVIRONMENTAL

Subject:  
Lockheed Martin Post-Closure Care Permit, The Dalles, Oregon  
Environmental Protection Agency Identification Number ORD 052 221 025  
Certification of Public Mailing

Dear Mr. Moore:

Date:  
October 4, 2005

~~The purpose of this letter is to certify that a notice of hazardous waste permit~~  
modification was sent out on this date to the mailing list maintained by the  
department. A copy of the mailing list and the notification letter is attached. A notice  
of the public meeting has been submitted to The Dalles Chronicle and should appear  
in tomorrow's paper. A proof of publication has been requested and shall be entered  
in the Operating Record when received.

Contact:  
Keith Smith  
  
Phone:  
406.449.7001 Ext. 11

Please don't hesitate to contact me if you have questions regarding this notification.

Email:  
kwsmith@arcadis-  
us.com

Sincerely,

ARCADIS G&M, Inc.

Our ref:  
GP000677.0012

Keith W. Smith, P.G.  
Senior Project Manager

Copies:

Harry Craig, EPA  
Marcy Kirk, ODEQ  
Bob Schwarz, ODEQ  
Bill Bath, LMC

Enc. As stated

Fredrick Moore  
October 4, 2005

## CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

---

Keith W. Smith, P.G.  
Senior Project Manager

Date

## NOTICE OF HAZARDOUS WASTE PERMIT MODIFICATION

RE: Notice of Class 2 and Class 3 Permit Modifications  
Lockheed Martin Corporation (LMC)  
EPA Permit # ORD 052 221 025

ARCADIS G&M, Inc.  
1610 B Street  
Suite 100  
Helena  
Montana 59601  
Tel 406 449 7001  
Fax 406 449 3036  
www.arcadis-us.com

This notice is to inform all persons on the LMC facility mailing list of a Class 2 and Class 3 modification to the Post-Closure Care Permit held by Lockheed Martin Corporation (LMC). LMC proposed this modification to the Oregon Department of Environmental Quality (ODEQ) on September 30, 2005. The modifications and notification are subject to the requirements in 40 CFR 270.42 adopted by OAR 340-100-002.

ENVIRONMENTAL

Date:  
October 4, 2005

The Class 3 modification request is being submitted to the ODEQ to add ARCADIS ~~as the operator on the Post-Closure Care Permit, and the Class 2 request is to change~~ the remedy for cyanide destruction from a thermal system to a system using bioremediation. The site is the former Martin Marietta facility now known as Lockheed Martin that is within the Northwest Aluminum property located at 3313 W. Second Street, The Dalles, Oregon.

Our ref:  
GP000677.0013

This notice also serves as an announcement of a public comment period in accordance with 40 CFR 270.42. Any comments must be sent to the agency contact person detailed below. The comment period starts on the date the notice is published in the local newspaper and runs for 60 days.

Any comments must be sent to Mr. Brett McKnight at the following address:

Mr. Brett McKnight  
Oregon Department of Environmental Quality  
2146 NE 4<sup>th</sup> Street  
Bend, OR 97701

A public meeting to discuss this proposal will be held November 8<sup>th</sup>, 7 p.m. in the large lecture hall at the Columbia River Community College, 400 East Scenic Drive. Building 1, Room 162, The Dalles, Oregon. Copies of the modification can be viewed in the office of the Oregon Department of Environmental Quality at The Dalles address listed here, Room No. 307.

NOTICE OF HAZARDOUS WASTE PERMIT MODIFICATION  
Notice of Class 2 and Class 3 Permit Modifications  
Lockheed Martin Corporation (LMC)  
EPA Permit # ORD 052 221 025

If you have any additional questions regarding this modification, please contact one of the following people:

- Mr. Keith Smith  
ARCADIS G&M, Inc.  
1610 B Street  
Suite 100  
Helena, MT 59601  
406-449-7001 ext 11
- Mr. Fredrick Moore  
Oregon Department of Environmental Quality  
2146 NE 4<sup>th</sup> Street  
Bend, OR 97701  
541-388-6146 ext 242
- Mr. Bill Bath  
Project Manager  
Lockheed Martin Corporation Shared Services  
Energy, Environment, Safety & Health  
2950 North Hollywood Way  
Suite 125  
Burbank, CA 91505  
303-977-3997

The permittee's compliance history during the life of the permit being modified is available from the agency contact person.

If you wish to be deleted from this mailing list or your address information has changed, please contact the ODEQ to ensure that the mailing list is updated.

Brett McKnight  
Oregon Department of Environmental Quality  
Eastern Region Hazardous Waste Program  
2146 NE 4<sup>th</sup> Street  
Bend, OR 97701

Subject:  
Lockheed Martin Post-Closure Care Permit, The Dalles, Oregon  
Environmental Protection Agency Identification Number ORD 052 221 025  
Class 2 and 3 Permit Modifications

Dear Mr. McKnight:

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On behalf of Lockheed Martin Corporation (LMC), ARCADIS has prepared the attached Class 2 permit modification for the RCRA facility in The Dalles (see attached September 13, 2005 letter from Keith Smith to Brett McKnight). ARCADIS has also prepared a Class 3 permit modification to identify Lockheed Martin Corporation as the Owner and ARCADIS G&M, Inc. as the operator (see attached September 13, 2005 letter from Keith Smith to Brett McKnight). Effective with the permit change identifying ARCADIS as operator, ARCADIS will no longer submit permit-required documents "on behalf of Lockheed Martin," but as the party with primary responsibility under the permit. After the permit modification Lockheed Martin will continue to submit a few documents to Oregon Department of Environmental Quality such as annual financial assurance updates. Pursuant to 40 CFR Part 270.11, I hereby delegate signature authority for such submittals to the Senior Manager of Remediation in Lockheed Martin's Energy, Environment, Safety and Health Department. Currently Christopher Ingalls and Gene Matsushita hold this position.

Both these permit modifications have been prepared with Lockheed Martin Corporation's full knowledge and consent. Please proceed with processing and coordinating review of these documents in accordance with your regulatory timeframes. Both permit modifications are being submitted to your agency at the same time to provide for cost efficiency for scheduling public meetings and to facilitate review of the documents.

Please don't hesitate to contact me if you have questions regarding this request.

Sincerely,

Kenneth Meashey  
Vice President Energy, Environment, Safety and Health  
Lockheed Martin Corporation

Copies:

Keith Smith  
Kathy Ivy  
Marcy Kirk  
Bob Schwarz  
Tom Blackman  
Gail Rymer

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# **CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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Date

Lockheed Martin Corporation

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ARCADIS G&M, Inc.  
1610 B Street  
Suite 100  
Helena  
Montana 59601  
Tel 406 449 7001  
Fax 406 449 3036  
www.arcadis-us.com

Brett McKnight  
Oregon Department of Environmental Quality  
Eastern Region Hazardous Waste Program  
2146 NE 4<sup>th</sup> Street  
Bend, OR 97701

ENVIRONMENTAL

Subject:  
Lockheed Martin Post-Closure Care Permit, The Dalles, Oregon  
Environmental Protection Agency Identification Number ORD 052 221 025  
Class 2 Permit Modification – Cyanide Destruction/Biological Treatment Process

Date:  
September 13, 2005

Dear Mr. McKnight:

Contact:  
Keith W. Smith

On behalf of Lockheed Martin Corporation (LMC), ARCADIS submits this request for a remedy change at the CERCLA landfill through modification of the Post-Closure Care Permit at Hazardous Waste Landfill ORD 052 221 025. Minor modifications to the RCRA Landfill operations are also requested herein based on the minimal amount of leachate production from the landfill. This permit modification has been developed in accordance with 40 CFR Chapter 1 Section 270.42 *Permit Modification at the Request of the Permittee*. The process of achieving a CERCLA remedy change and other modifications through the RCRA permit process is detailed in the Memorandum of Agreement (MOA) signed between the United States Environmental Protection Agency (EPA) and the Oregon Department of Environmental Quality (ODEQ). The MOA states that remedy change requirements under CERCLA will be addressed through the appropriate RCRA permit modification.

Phone:  
406.449.7001 Ext. 11

Email:  
kwsmith@arcadis-us.com

Our ref:  
GP000677.0012  
MH003

(1) For a Class 2 modification the permittee must:

(i) Describe the exact changes to be made to the permit conditions and supporting documents referenced by the permit.

Changes to be made to this permit include:

- Revising the treatment method of treatment of free cyanide from thermal destruction to bioremediation (or bio-destruction) as described, a new attachment to the existing permit. Attachment F (Appendix A) incorporates the Batch Discharge Protocol;
- Adding four new monitor wells to the CERCLA landfill groundwater monitor network (MW-38S through MW-41S) and revising the Sampling and Analysis Plan (Appendix B) to reflect the addition of four monitoring wells at the CERCLA landfill to be monitored annually for total and free cyanide, fluoride, sulfate, and field parameters;
- Revising the reporting schedule for CERCLA wells to the annual (pre-Temporary Authorization) schedule;
- Discontinuing use of the automatic dialer in the RCRA sump (Appendix C);

Part of a bigger picture

- Discontinuing the requirement for photo logs of the RCRA landfill cap drains for the Final Cover Inspection form; and
- Revising the transfer schedule for RCRA leachate from a 90 day schedule to a bi-annual schedule to coincide with sampling the RCRA groundwater monitor wells;

In 1994 an Explanation of Significant Differences was written (EPA/ESD/R10-94/090) to describe various modifications to remedial actions anticipated in the Record of Decision (ROD) signed September 29, 1998. One of the significant differences described was a change in the leachate treatment system from chemical oxidation for destruction of cyanide followed by chemical precipitation to remove fluoride. The ROD specified that the treated leachate had to meet the standards established pursuant to existing NPDES requirements prior to discharge of the treated leachate to surface water. The performance standard for treatment of free cyanide was established at 0.1 mg/L when an NPDES permit was issued in 1989.

During the remedial design phase it was determined that treatment and destruction of cyanide via chemical oxidation would not meet the free cyanide performance standard of 0.1 mg/L. A hydrolysis treatment system, consisting of heating the cyanide and water in a controlled reaction vessel, was determined to be the most technically feasible means of achieving the established performance standard, but not necessarily the most cost effective. The proposed permit modification herein is to change the method of cyanide destruction from thermal to biological remediation as discussed in detail in item iii below. Currently, the proposed biological destruction is the most technically feasible and the most cost effective treatment of free cyanide long term goals at this site.

The Leachate Collection System and Transfer Pad Inspection in the Inspection Plan for the RCRA landfill will be revised to delete the reference to the automatic phone dialing device. As described in section (1)(iii), this precautionary measure is no longer necessary due to the low volume of leachate produced in the sump. Photo logs and RCRA leachate transfer modifications are also discussed.

*(ii) Identify that the modification is a Class 2 modification.*

The changes listed in (1)(i) are Class 2 permit modifications because these activities propose modifications of a waste pile, tank or landfill management practice as described in Appendix I to section 270.42 Classification of Permit Modification.

*(iii) Explain why the modification is needed.*

ARCADIS received temporary authorization to initiate pilot tests of accelerated methods of free cyanide destruction from ODEQ in 2004. Approved leachate treatment at the time was a high maintenance, high cost thermal cyanide destruction system that was not practical to operate for the life of the permit. Treated leachate was discharged through the Northwest Aluminum's (NWA) storm water (National Pollutant Discharge Elimination System [NPDES] permit) outfall.

## ARCADIS

Mr. Brett McKnight  
September 13, 2005

The performance standard for the discharge of free cyanide via the NPDES outfall was 0.1 mg/L, measured at the cyanide destruction system (CDS) tank prior to discharge to the NPDES outfall.

ARCADIS implemented batch biotreatment of leachate in the cyanide destruction system (CDS) tank and limited bioremediation of CERCLA landfill leachate through surface applications of organic carbon. Based on the positive results from these bioremediation activities, ARCADIS expanded site remediation beginning in 2004 to further accelerate free cyanide reduction and streamline operating and maintenance activities. These included:

- Pilot testing continuous leachate treatment in the leachate collection system (LCS) and batch discharge from the CDS tank to the NWA outfall;
- CERCLA landfill surface applications of organic carbon to treat leachate in-situ along the west side of the landfill; and
- Continued treatment of leachate in the existing CDS tank, as necessary, prior to discharge.

Based on the results of earlier pilot tests, ODEQ approved this technology for routine leachate treatment and ARCADIS permanently shut down the CDS in May 2002. Since that time, ARCADIS has exclusively used bioremediation technology and discharge from the CDS tank to the NPDES.

The data for the tables and charts begins with the CERCLA land application in 2002. The data indicate that cyanide is being treated within the LCS due to land surface applications, as shown by decreasing cyanide trends. This demonstrates that land applications are an effective pre-treatment technology for cyanide in the CERCLA leachate and in and around the LCS.

Upon approval of the pilot tests proposed in the Comprehensive Work Plan, ARCADIS expanded the surface application of organic carbon along the south and west sides of the CERCLA landfill. Rates and methods of application reflected leachate characteristics at the time of the surface treatment. Quarterly sampling to monitor the bioremediation activities was initiated during the fall of 2004. Manholes 2 and 4 have been monitored for total and free cyanide, total organic carbon, bromide, and field parameters. Shallow "S" aquifer wells were sampled for total and free cyanide, fluoride, total organic carbon, sulfate, and field parameters.

ARCADIS expanded the biological treatment process for CERCLA leachate through the addition of a drip system that supplies a measured amount of organic carbon into the LCS, down-gradient of the monitoring location in Manhole 4. The pump has been delivering measured amounts of organic carbon solution into Manhole 4. Discretionary nutrient additions have also taken place in manholes 1, 2, and 3. Quarterly sampling has been conducted at Lift Stations 1 and 2; samples have been analyzed for total and free cyanide, total organic carbon, and bromide and field

## ARCADIS

parameters. The free cyanide standard of 0.1 mg/L has been achieved from Lift Station 1 since shortly after (within six weeks) of the initiation of in-LCS treatment, (ie. the leachate being pumped to the CDS tank is at discharge standard).

Finally and as stated earlier, CERCLA leachate is treated, as necessary, in the CDS tank prior to discharge via the NWA NPDES storm water outfall. Tank treatment has varied in additives and dosing volumes based on the chemical composition of the leachate in the tank to achieve the 0.1 mg/L discharge limit for free cyanide.

Results for all CERCLA LCS sampling are presented in Table 1. Average total cyanide values for each of the LCS components is shown on Chart 1a and average free cyanide values are shown on Chart 1b. These charts present all of the total and free cyanide results from the CDS tank from March 2002 to present.

In addition, continued coordination with NWA for discharge via the NWA NPDES permit has provided protection for human health and the environment within the requirements of that permit. The bioremediation treatment method has been proven and is supported by the analytical data discussed (the performance standard of 0.1 mg/L free cyanide can be maintained with the use of this feasible and cost effective treatment method). Attachment F describes the specific operational information regarding the biological treatment proposal and the Batch Discharge Protocol.

Existing wells MWR-8S, MW-9S and MWR-15S were monitored quarterly for one year after initiation of the pilot tests for total and free cyanide, fluoride, total organic carbon, sulfate, and field parameters. Four new wells drilled to monitor pilot test activities (MW-38S, MW-39S, MW-40S and MW-41S) are being monitored for the same constituents. This permit modification proposes to add the four new wells (MW-38S through MW-41S) to the CERCLA well monitoring network. These wells will be monitored on the same schedule and frequency as the currently approved monitor well network. It is proposed that compliance groundwater monitoring for the CERCLA landfill be scheduled on an annual basis, back to the pre-Temporary Authorization schedule.

The contingency plan set forth in the Consent Decree describes the installation of recovery wells down gradient of the landfill. If contamination above an ARAR or other remediation criteria in the A or B aquifer were indicated by the groundwater monitoring plan, the contingency plan would be implemented. The recovered groundwater would be transmitted to a treatment unit and then routed to the roof scrubber system or to the in-plant process system. The proposed contingency plan for the bioremediation remedy modification would be to continue to monitor the effectiveness of the treatment system with the compliance monitoring wells and to use the CDS tank as a holding and treatment facility as necessary. The following three items pertain to operations at the RCRA Landfill.

ARCADIS proposes to discontinue the use of the automated dialer at the RCRA sump. Leachate production has consistently dropped off during the past 15 years and has not exceeded 10 gallons

## ARCADIS

per day for the past 5 years (The sump capacity is 482 gallons.) Leachate production over the past 2 years has ranged from 0.8 to 1.2 gallons per day. The sump will continue to be visually inspected weekly by a trained employee with a cell phone.

ARCADIS proposes to revise the schedule for transfer of RCRA leachate from the RCRA sump to the CDS tank from once every 90 days to semi-annually, in conjunction with the sampling of the RCRA groundwater monitor well network. This change is proposed to reflect the operational record of the effectiveness of the landfill to contain landfill wastes and to reflect the very low volume of RCRA leachate generated.

ARCADIS proposes to discontinue the photo log of the RCRA landfill drains as part of the Final Cover Inspection form. Visual inspection of the drains is required as part of the inspection protocol. Any maintenance or corrective measures are taken during the inspection and the photo log is unnecessary documentation of a static feature.

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*(iv) Provides the applicable information required by §§ 270.13 through 270.21, 270.62 and 270.63.*

This permit modification does not propose to change any information previously submitted as required by applicable portions of §§ 270.13 through 270.21. Neither 270.62 nor 270.63 are applicable to this operation.

*(2) Public notice requirements.*

A draft copy of the public notice is enclosed for your review and comment. It includes the announcement of a 60-day comment period and the name and address of the agency contact to whom comments must be sent. The date, time and place for the public meeting will be identified as decided. It contains the name and phone number of the permittee's contact person and the agency contact person. The location of where copies of the modification request can be viewed and copied is identified. The public notice contains the following statement: "The permittee's compliance history during the life of the permit being modified is available from the agency contact person identified in this notice." A certification that the public notice has been sent as required will be submitted with the permit modification.

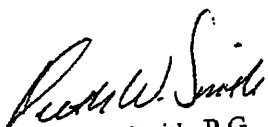
Mr. Brett McKnight  
September 13, 2005

ARCADIS

If you have any questions regarding this request for a Class 2 modification of the approved remedy at the CERCLA landfill as described in this document, please don't hesitate to contact me at 406.449.7001 Ext. 11.

Sincerely,

ARCADIS G&M, Inc.



Keith W. Smith, P.G.  
Senior Project Manager

---

Copies:

Kathy Ivy, EPA  
Fredrick Moore, ODEQ  
Marcy Kirk, ODEQ  
Bob Schwarz, ODEQ  
Galen May, NWA  
Bill Bath, LMC

ARCADIS

ARCADIS G&M, Inc.  
1610 B Street  
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Tel 406 449 7001  
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NOTICE OF MODIFICATION

RE: Notice of Class 2 Modification  
Lockheed Martin Corporation (LMC)  
Part A Permit # ORD 052 221 025

ENVIRONMENTAL

This notice is to inform all persons on the LMC facility mailing list of a Class 2 modification to the Permit. LMC proposed this modification to the Department of Environmental Quality (ODEQ) on September 13, 2005. The modification and notification are subject to the requirements in 40 CFR 270.42(c) and OAR 340-100-002.

Date:  
September 13, 2005

This modification request is being submitted to the ODEQ to change the remedy for cyanide destruction from a thermal system to a system using bioremediation.

Our reference:  
GP000677.0012

This notice also serves as an announcement of a public comment period in accordance with 40 CFR 270.42(c)(2). Any comments must be sent to the agency contact person detailed below. The comment period starts on the date the notice is published and runs for 60 days.

Any comments must be sent to Mr. Brett McKnight at the following address:

Mr. Brett McKnight  
Oregon Department of Environmental Quality  
2146 NE 4th Street Suite #104  
Bend, OR 97701

A public meeting to discuss this proposal will be held October 13, 2005 at the Conference Room of the Oregon Department of Environmental Quality, Eastern Region, 400 East Scenic Drive, Suite 307, The Dalles, Oregon. Copies of the modification can be viewed and copied at this site.

If you have any additional questions regarding this modification, please contact one of the following people:

- Mr. Keith Smith  
ARCADIS G & M  
1610 B. Street  
Helena, MT 59601  
(406) 449-7001 Ext. 11



ARCADIS

Mr. Brett McKnight  
September 13, 2005

- Fredrick Moore  
Oregon Department of Environmental Quality  
2146 NE 4th Street Suite #104  
Bend, OR 97701  
541-388-6146 ext 242

The permittee's compliance history during the life of the permit being modified is available from the agency contact person.

If you wish to be deleted from this mailing list or your address information has changed, please contact the ODEQ to ensure that the mailing list is updated.

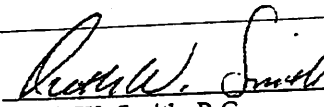
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ARCADIS

Mr. Brett McKnight  
September 13, 2005

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Keith W. Smith, P.G.  
Senior Project Manager

9-14-05

Date